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Datasheet for the decision of 25 June 2026

Case Number: T 0666/25 - 3.5.04

Application Number: 20770096.4

Publication Number: 3923583

IPC: H04N19/577, H04N19/52, H04N19/70

Language of the proceedings: EN

Title of invention:
VIDEO OR IMAGE CODING FOR INDUCING WEIGHT INDEX INFORMATION FOR BI-PREDICTION

Applicant:
LG Electronics Inc.

Headword:

Relevant legal provisions:
EPC Art. 56
RPBA 2020 Art. 12(4), 13(2)

Keyword:
Main request and first auxiliary request - amendment admitted (yes)
Main request and first auxiliary request - inventive step (no)
Second and third auxiliary requests - taken into account - exceptional circumstances (no)

Decisions cited:
T 2486/16

Catchword:

Europäisches Patentamt
European Patent Office
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Beschwerdekammern

Boards of Appeal

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Case Number: T 0666/25 - 3.5.04

D E C I S I O N
of Technical Board of Appeal 3.5.04
of 25 June 2026

Appellant: (Applicant)	LG Electronics Inc. 128, Yeoui-daero Yeongdeungpo-Gu Seoul 07336 (KR)
Representative:	Mooser, Sebastian Thomas Wuesthoff & Wuesthoff Patentanwälte und Rechtsanwalt PartG mbB Schweigerstraße 2 81541 München (DE)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted/electronically transmitted on 3 December 2024 refusing European patent application No. 20770096.4 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chair	M. Paci
Members:	F. Sanahuja
	B. Müller

Summary of Facts and Submissions

I. The appeal is against the examining division's decision to refuse European patent application No. 20 770 096.4 dated 3 December 2024.

II. The documents cited in the decision under appeal included the following:

D1 J. Chen et al., "*Test Model 3 of Versatile Video Coding (VTM 3)*", Joint Video Experts Team (JVET) of ITU-T SG 16 WP 3 and ISO/IEC JTC 1/SC 29/ WG 11, 12th Meeting, Macao, CN, 3 to 12 October 2018, document no. JVET-L1002-v1, server date: 14 January 2019, XP030215596

III. The application was refused on the following grounds.

- The main request did not meet the requirements of Articles 84 and 123(2) EPC.

- The subject-matter of claims 1, 6, 11 and 12 (erroneously referred to as 1, 7, 12 and 13) of the auxiliary request lacked inventive step (Article 56 EPC).

IV. The applicant (appellant) filed notice of appeal. With its statement of grounds of appeal, the appellant filed claims according to a main request and an auxiliary request (referred to below as the first auxiliary request). The appellant indicated a basis for the amendments to the claims and submitted arguments why the subject-matter of the independent claims of each

request involved an inventive step.

V. The board issued summons to oral proceedings and a communication under Article 15(1) RPBA. In this communication, the board gave the following preliminary opinion, *inter alia*.

- The board was minded to admit the main request and the first auxiliary request filed with the statement of grounds of appeal into the appeal proceedings in the exercise of its discretion under Article 12(4) RPBA.

- The subject-matter of claims 1, 6, 11 and 12 of the main request and the first auxiliary request lacked inventive step over the disclosure of document D1 (Article 56 EPC).

VI. With a letter dated 28 April 2026, the appellant filed claims according to a second and a third auxiliary request. The appellant indicated a basis for the amendments to the claims of the second and third auxiliary requests and argued in favour of inventive step.

VII. In a communication dated 7 May 2026, the board informed the appellant that the board did not find the appellant's arguments regarding inventive step for the main request and the first auxiliary request persuasive and that the board was inclined not to take into account the second and third auxiliary requests in the appeal proceedings (Article 13(2) RPBA).

VIII. With a letter dated 27 May 2026, the appellant indicated that neither the applicant nor the representative would attend the oral proceedings.

Thereupon, the oral proceedings were cancelled.

IX. As apparent from the file, the appellant's final requests were that the decision under appeal be set aside and that a patent be granted on the basis of the claims according to the main request or, alternatively, to the first auxiliary request, both requests filed with the statement of grounds of appeal, or the claims according to the second or third auxiliary request, both requests filed with the letter dated 28 April 2026.

X. Claim 1 of the **main request** reads as follows:

"*An image decoding method performed by a decoding apparatus, the method comprising:*

receiving (S1200) image information comprising inter prediction mode through a bitstream;

generating (S1210) a merge candidate list of a current block based on the inter prediction mode information;

selecting (S1220) a candidate among candidates included in the merge candidate list;

deriving (S1240) motion information of the current block based on the selected candidate;

generating (S1250) L0 prediction samples and L1 prediction samples based on the derived motion information; and

generating (S1260) prediction samples of the current block based on the L0 prediction samples, the L1 prediction samples and weight information,

wherein the weight information is derived based on weight index information for the selected candidate,

wherein the candidates related to a block merge include an inherited affine candidate and a constructed affine candidate,

wherein the constructed affine candidate includes control point motion vectors, CPMVs,

wherein, based on both the constructed affine candidate including the CPMVs for control point 0, CP0, CP1 and CP2 and a bi-prediction being applied to the current block, weight index information for the constructed affine candidate is derived as weight index information of a specific block used for deriving a CPMV for the CP0, wherein the specific block is a top-left corner neighboring block of the current block, a left neighboring block adjacent to a bottom side of the top-left corner neighboring block or a top neighboring block adjacent to a right side of the top-left corner neighboring block, and

wherein the CP0 is located at the top-left corner of the current block."

XI. Claim 1 of the **first auxiliary request** differs from claim 1 of the main request in that the following text has been added at the end of the claim:

"*, wherein the CP1 is located at the top-right corner of the current block, and*

wherein the CP2 is located at the bottom-left corner of the current block"

XII. Claim 1 of the **second auxiliary request** differs from claim 1 of the first auxiliary request in that the following text has been added at the end of the claim:

", *wherein the candidates include a sub-block-based temporal motion vector prediction, SbTMVP, candidate derived based on motion vectors of temporal sub-blocks in a collocated picture, and*

weight index information for the SbTMVP candidate is derived as 0"

XIII. Claim 1 of the **third auxiliary request** differs from claim 1 of the first auxiliary request in that the derivation of the weight index information has been amended as follows (additions underlined):

"*weight index information for the constructed affine candidate is derived as weight index information of a specific block used for deriving a CPMV for only the CP0 among the CP0, CP1 and CP2*,"

Reasons for the Decision

1. *Decision in written proceedings*

Following the request for oral proceedings in the statement of grounds of appeal and subsequent to the communication of the board under Article 15(1) RPBA, the appellant stated in its letter dated 27 May 2026 that "*neither the applicant nor the representative will attend the oral proceedings*". Such a statement is

normally treated as equivalent to a withdrawal of the request for oral proceedings (see Case Law of the Boards of Appeal, 11th edn., 2025, III.C.5.3.2 a)). Hence, there is no pending request for oral proceedings pursuant to Article 116(1) EPC on file.

Subsequent to the appellant's announcement of non-attendance, the scheduled oral proceedings were cancelled. Therefore, the present decision is taken in written proceedings in accordance with Article 12(8) RPBA. The case is ready for decision on the basis, especially, of the contested decision, the appellant's written submissions and the board's communications.

2. *The invention*

The invention relates to image encoding and decoding methods as well as storage and transmission of encoded data.

In inter prediction, an inter-predicted block may be coded using bi-prediction, which involves weighting two sets of prediction samples using respective weight indices. Prediction samples for a current block may be generated based on motion information of a constructed affine candidate. Such a candidate includes control point motion vectors (CPMVs) for multiple control points (CPs). These CPMVs represent the motion vectors associated with the positions of the CPs within the block.

The invention addresses the derivation of weight index information for such a constructed affine candidate when bi-prediction is applied. The weight index information is derived as the weight index information of the specific block used for deriving the CPMV for

control point 0 (CP0), which is located at the top-left corner of the current block. The specific block is one of the three adjacent spatially neighbouring blocks to the top-left corner of the current block.

3. *Main request and first auxiliary request - admittance (Article 12(4) RPBA)*

3.1 Under Article 12(2) and (4) RPBA, a submission constitutes an amendment if it is not directed to the requests, facts, objections, arguments and evidence on which the decision under appeal was based. Any such amendment may be admitted only at the discretion of the board.

Under Article 12(4) RPBA, the board must exercise its discretion in view of, *inter alia*, the complexity of the amendment and the need for procedural economy.

3.2 The appellant submitted that the claims of the main request corresponded to the claims of the auxiliary request that had formed the basis for the decision under appeal, except that the expression "*indicated based on*" in the independent claims had been replaced with "*derived as*" (see section II.1 of the statement of grounds of appeal). The independent claims of the first auxiliary request further specified the location of the control points CP1 and CP2 (see section III.1 of the statement of grounds of appeal).

3.3 While these changes constitute amendments under Article 12(4) RPBA, the examining division interpreted the subject-matter of the claims of the then-pending auxiliary request as currently amended. Therefore, the amendments to the main request and the first auxiliary request do not substantially change the subject-matter

of the proceedings, increase the complexity of the case or adversely affect procedural economy. Consequently, the board admitted these requests into the appeal proceedings in the exercise of its discretion under Article 12(4) RPBA.

4. *Main request - inventive step (Article 56 EPC)*

4.1 An invention is to be considered to involve an inventive step if, having regard to the state of the art, it is not obvious to a person skilled in the art (Article 56 EPC).

4.2 The examining division identified document D1 as the starting point for the assessment of inventive step of the subject-matter of claim 1 of the then-pending auxiliary request (see point 5 of the decision under appeal). The appellant did not dispute this.

4.3 It is undisputed that document D1, which describes Versatile Video Coding, does not disclose the following features of claim 1 of the main request (see section 5 of the decision under appeal and section II.2 of the statement of grounds of appeal):

"*wherein, based on both the constructed affine candidate including the CPMVs for control point 0, CP0, CP1 and CP2 and a bi-prediction being applied to the current block, weight index information for the constructed affine candidate is derived as weight index information of a specific block used for deriving a CPMV for the CP0, wherein the specific block is a top-left corner neighboring block of the current block, a left neighboring block adjacent to a bottom side of the top-left corner neighboring block or a top*

neighboring block adjacent to a right side of the top-left corner neighboring block"

4.4 These distinguishing features specify how weight index information is derived for a constructed affine candidate when bi-prediction is applied: namely, as weight index information of the specific block used for deriving the CPMV for CP0.

4.4.1 The appellant submitted that compared to other methods, this derivation method reduced the complexity of the image coding system as it did not require acquiring and comparing weight indices of multiple neighbouring blocks of multiple CPs or processing the results derived from them (see page 8 of the statement of grounds of appeal).

4.4.2 The application as filed (see paragraphs [0237] to [0241] of the description) does not explicitly attribute any advantageous effect to the selection of a specific CP to derive weight index information over alternative strategies. However, the board agrees with the appellant that the claimed solution is technically simple and requires only minimal computational processing.

4.4.3 Therefore, the objective technical problem can be formulated as how to efficiently and simply derive weight index information for a constructed affine candidate when bi-prediction is applied, while minimising computational overhead.

4.5 The person skilled in the art, faced with the task of deriving weight index information for a constructed affine candidate and aiming for efficiency and

simplicity, would naturally have sought the simplest possible derivation method.

4.5.1 A fixed weight index could be considered the baseline for minimal computation. However, it might lead to sub-optimal prediction quality as it bears no relation to the inferred motion characteristics of the block.

4.5.2 To obtain weight index information expected to provide better prediction quality than a simple default while still minimising computation, the person skilled in the art would have looked to information that is readily available and requires minimal processing.

4.5.3 In this context, document D1 discloses, for an inherited affine merge candidate - which is derived from a sole neighbouring block, inferring weight index information from neighbouring blocks based on the merge candidate index (see second paragraph in section 3.4.7 of document D1, section 5 of the decision under appeal and section II.2 of the statement of grounds of appeal).

4.5.4 To solve the objective technical problem, the person skilled in the art might also have considered more complex approaches, such as performing operations on the weight indices from the blocks used to derive motion information for all the CPs or averaging multiple weight indices. However, such methods would not have resulted in a simple solution and would have required more computational resources.

4.5.5 The person skilled in the art, seeking to provide weight index information related to the characteristics of the block with the least computational overhead, would have considered the specific block used to derive

the CPMV of any of the block's CPs for derivation of weight index information. This specific block, like the block used to derive CPMVs of an inherited affine merge candidate, shares inferred motion characteristics of the current block.

Of the blocks used to derive the CPMV for the block's CPs, the block used to derive the CPMV for CP0 is a highly straightforward choice for the person skilled in the art as CP0 is a prominent and often primary reference point in affine prediction. However, in the absence of any further advantageous technical effect associated with the specific block used to derive the CPMV of CP0 over the one used to derive the CPMV of CP1 or CP2 for deriving weight index information, the choice of the former remains an arbitrary selection among the available CPs when computation simplicity is the primary driver.

The board notes that document D1, in its description of constructed affine candidate generation, discloses deriving the CPMV for CP0 from either the top-left corner neighbouring block of the current block, the left neighbouring block adjacent to the bottom side of the top-left corner neighbouring block, or the top neighbouring block adjacent to the right side of the top-left corner neighbouring block, as claimed (see paragraph below Figure 23 in section 3.4.3.1).

Therefore, inferring weight index information directly from one of the claimed specific blocks used for deriving a CPMV for CP0 represents a straightforward and computationally inexpensive approach to obtain a relevant weight index.

4.5.6 The appellant's arguments are summarised as follows (see section II of the letter dated 28 April 2026).

(a) Document D1 did not disclose any problem arising from the conventional method of inferring weight index information from all neighbouring blocks. Hence, the person skilled in the art would have followed a well-established rule to infer weight index information for a constructed affine candidate, i.e. by pooling or comparing the indices of all neighbouring blocks involved in the model (e.g. neighbours of CP0, CP1 and CP2).

(b) The combination of two inherently divergent technical motivations - the desire for simplicity (minimising computational overhead) and the need to maintain prediction quality - appeared uniquely tailored to arrive at the claimed solution, and thus was influenced by an *ex post facto* perspective.

(c) Even if the skilled person had considered both simplicity and prediction quality, there would have been several possible options for deriving weight index information for the constructed affine candidate other than using weight index information of a block used for deriving a CPMV for only CP0 or only one of CP0, CP1 and CP2.

4.5.7 The board does not find the appellant's arguments persuasive for the following reasons.

(a) It is not apparent that document D1 discloses applying any conventional method or established rule for the derivation of weight index information for a constructed affine candidate for

bi-prediction or that such a method or rule exists. Moreover, the appellant submitted that there were discussions between the experts in the technical field on how to derive the weight index for a constructed affine candidate and submitted evidence for this (see section II.3 of the statement of grounds of appeal). Therefore, the board is not convinced that any existing strategy would have been considered conventional or established or that the person skilled in the art would have been limited to their application.

In any case, the pursuit of simplicity or efficiency, for example in the form of computational load, is a driving innovation factor for the person skilled in the art. It is therefore inconsequential whether document D1 discloses any problem arising from alleged conventional or established strategies.

(b) The person skilled in the art of video coding is motivated by two often competing goals: achieving the best possible compression efficiency (which implies high prediction quality) and doing so with the lowest possible computational complexity (simplicity). The combination of simplicity and prediction quality is not to be regarded as a uniquely tailored *ex post facto* construction but represents a fundamental trade-off that the person skilled in the art constantly faces. It merely balances the common and well-understood constraints of complexity and quality.

(c) Even if other solutions could possibly be considered by the person skilled in the art for deriving weight index information of a constructed

affine candidate, they would at most represent further obvious solutions to the existing technical problem and would not have prevented the person skilled in the art from recognising that using weight index information used for deriving the CPMV for CP0 is suitable for that purpose.

4.6 In view of the above, the subject-matter of claim 1 of the main request lacks inventive step over the disclosure of document D1 (Article 56 EPC).

5. *First auxiliary request - inventive step (Article 56 EPC)*

5.1 The amendments to claim 1 of the first auxiliary request specify the standard corner locations for CP1 and CP2 (top right and bottom left, respectively), as disclosed in document D1 (see Figure 23 and subsequent paragraph in section 3.4.3.1).

5.2 Therefore, for the reasons set out in section 4. above, the subject-matter of claim 1 of the first auxiliary request lacks inventive step over the disclosure of document D1 (Article 56 EPC).

6. *Second and third auxiliary requests - admittance into the appeal proceedings (Article 13(2) RPBA)*

6.1 Under Article 13(2) RPBA, any amendment to a party's appeal case after notification of a communication under Article 15(1) RPBA is, in principle, not to be taken into account unless there are exceptional circumstances, which have been justified with cogent reasons by the party concerned.

6.2 Claim 1 of the second auxiliary request differs from claim 1 of the first auxiliary request in that the candidates include a sub-block-based temporal motion vector prediction (SbTMVP) candidate derived based on motion vectors of temporal sub-blocks in a collocated picture and in that weight index information for the SbTMVP candidate is derived as 0.

Claim 1 of the third auxiliary request differs from claim 1 of the first auxiliary request in that "*weight index information for the constructed affine candidate is derived as weight index information of a specific block used for deriving a CPMV for only the CP0 among the CP0, CP1 and CP2*" (emphasis added by the board).

6.3 The second and third auxiliary requests were filed after notification of the communication under Article 15(1) RPBA. The appellant did not justify the filing of these auxiliary requests at this stage of the proceedings. In particular, it did not explain why the circumstances leading to the amendments were exceptional.

6.4 The board cannot identify any exceptional circumstances within the meaning of Article 13(2) RPBA that justified taking into account the second and third auxiliary requests.

In its communication under Article 15(1) RPBA, the board relied on the same facts and evidence as the examining division and reached the same conclusion that the subject-matter of the amended independent claims of both the main request and the first auxiliary request did not involve an inventive step in view of prior-art document D1. Therefore, the amendments cannot be regarded as a response to an unexpected development of

the case or a new objection raised for the first time in the communication of the board under Article 15(1) RPBA. The board departed in some respects from the reasoning of the examining division on inventive step (by acknowledging that there were more solutions to the problem than acknowledged by the examining division) but reached the same conclusion. It follows that that there are no exceptional circumstances within the meaning of Article 13(2) RPBA justifying the filing of new requests as a response (see T 2486/16, Reasons 6.6.3), in this case, the second and third auxiliary requests.

6.5 For these reasons, the board does not take into account the second and third auxiliary requests in the appeal proceedings (Article 13(2) RPBA).

7. *Conclusion*

The main request and the first auxiliary request are not allowable because the subject-matter of claim 1 does not involve an inventive step (Article 56 EPC). The second and third auxiliary requests are not taken into account in the appeal proceedings (Article 13(2) RPBA). It follows that the appeal is to be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chair:

K. Boelicke M. Paci

Decision electronically authenticated